Currently Pending Elected Claims (USSN 09/558,741)

42. (Three times amended) An isolated DNA molecule comprising a coding sequence encoding a polypeptide[for binding preferentially to a c-erbB-2 or a c-erbB-2-related tumor antigen], the polypeptide comprising:

an amino acid sequence comprising an ordered arrangement of three complementarity determining regions (CDRs) interposed between framework regions (FRs), wherein the sequence of amino acids of said ordered arrangement of three CDRs has at least 70% sequence identity to the sequence of amino acids of an ordered arrangement of three CDRs selected from the group consisting of amino acid residue numbers 31-35, 50-66, 99-104 of SEQ ID NO:6; amino acid residue numbers 157-167, 183-189, 222-230 of SEQ ID NO:6; amino acid residue numbers 31-37, 52-68, 101-110 of SEQ ID NO:2; and amino acid residue numbers 159-169, 185-191, 224-233 of SEQ ID NO:2.

43. A host cell transfected with a DNA of claim 42.

50. (Amended) The DNA molecule of claim 42, wherein said FR sequences are human immunoglobulin framework region sequences.

51. A recombinant vector comprising the DNA molecule of claim 42 operably linked to control elements, whereby the coding sequence encoding said polypeptide can be transcribed and translated in a host cell.

52. A recombinant vector comprising the DNA molecule of claim 50 operably linked to control elements, whereby the coding sequence encoding said polypeptide can be transcribed and translated in a host cell.

53. A host cell comprising the recombinant vector of claim 51.

54. A host cell comprising the recombinant vector of claim 52.

55. A method of producing a recombinant polypeptide comprising:

(a) providing a population of host cells according to claim 53; and

(b) culturing said population of cells under conditions whereby the polypeptide encoded by the coding sequence present in said recombinant vector is expressed.

56. A method of producing a recombinant polypeptide comprising:

(a) providing a population of host cells according to claim 54; and

(b) culturing said population of cells under conditions whereby the polypeptide encoded by the coding sequence present in said recombinant vector is expressed.

57. (New) The DNA molecule of claim 42, wherein the amino acid sequence has the general formula FR1-CDR1-FR2-CDR2-FR3-CDR3-FR4, wherein FR1, FR2, FR3 and FR4 are framework regions and CDR1 is a sequence of amino acids with at least 90% sequence identity to the sequence of amino acids found at amino acid positions 31-35 of SEQ ID NO:6, CDR 2 is a sequence of amino acids with at least 90% sequence identity to the sequence of amino acids found at amino acid positions 50-66 of SEQ ID NO:6 and CDR 3 is a sequence of amino acids with at least 90% sequence identity to the sequence of amino acids found at amino acid positions 99-104 of SEQ ID NO:6; or CDR1 is a sequence of amino acids with at least 90% sequence identity to the sequence of amino acids found at amino acid positions 157-167 of SEQ ID NO:6, CDR2 is a sequence of amino acids with at least 90% sequence identity to the sequence of amino acids found at amino acid positions 183-189 of SEQ ID NO:6 and CDR3 is a sequence of amino acids with at least 90% sequence identity to the sequence of amino acids found at amino acid positions 222-230 of SEQ ID NO:6.

58. (New) The DNA molecule of claim 57, wherein CDR1 is the sequence of amino acids found at amino acid positions 31-35 of SEQ ID NO:6, CDR 2 is the sequence of amino acids found at amino acid positions 50-66 of SEQ ID NO:6 and CDR 3 is the sequence of amino acids found at amino acid positions 99-104 of SEQ ID NO:6; or CDR1 is the sequence of amino acids found at amino acid positions 157-167 of SEQ ID NO:6, CDR2 is the sequence of amino acids found at amino acid positions 183-189 of SEQ ID NO:6 and CDR3 is the sequence of amino acids found at amino acid positions 222-230 of SEQ ID NO:6,

and further wherein the polypeptide is capable of binding c-erbB-2.

59. (New) The DNA molecule of claim 42, wherein the coding sequence encodes a first polypeptide comprising a first amino acid sequence of the general formula FR1-CDR1-FR2-CDR2-FR3-CDR3-FR4 and a second polypeptide comprising a second amino acid sequence of the general formula FR1'-CDR1'-FR2'-CDR2'-FR3'-CDR3'-FR4', wherein FR1, FR2, FR3, FR4, FR1', FR2', FR3' and FR4' are framework regions and each of CDR1, CDR2, CDR3, CDR1', CDR2' and CDR3' is a sequence of amino acids with at least 90% sequence identity to the sequence of amino acids found at amino acid positions 31-35 of SEQ ID NO:6, the sequence of amino acids found at amino acid positions 50-66 of SEQ ID NO:6, the sequence of amino acids found at amino acid positions 99-104 of SEQ ID NO:6, the sequence of amino acids found at amino acid positions 157-167 of SEQ ID NO:6, the sequence of amino acids found at amino acid positions 183-189 of SEQ ID NO:6 and the sequence of amino acids found at amino acid positions 222-230 of SEQ ID NO:6, respectively.

60. (New) The DNA molecule of claim 59, wherein said first and second polypeptides together are capable of forming a binding site for c-erbB-2.

61. (New) The DNA molecule of claim 60, wherein each of CDR1, CDR2, CDR3, CDR1', CDR2' and CDR3' is the sequence of amino acids found at amino acid positions 31-35 of SEQ ID NO:6, the sequence of amino acids found at amino acid positions 50-66 of SEQ ID NO:6, the sequence of amino acids found at amino acid positions 99-104 of SEQ ID NO:6, the sequence of amino acids found at amino acid positions 157-167 of SEQ ID NO:6, the sequence of amino acids found at amino acid positions 183-189 of SEQ ID NO:6 and the sequence of amino acids found at amino acid positions 222-230 of SEQ ID NO:6, respectively,

and further wherein said first and second polypeptides together are capable of forming an antibody immunologically reactive with c-erbB-2.

62. (New) The DNA molecule of claim 61, wherein said first and second polypeptides together are capable of forming a humanized antibody.

63. (New) The DNA molecule of claim 62, wherein said FR sequences are human immunoglobulin framework region sequences of a human myeloma antibody.

64. (New) The DNA molecule of claim 42, wherein the amino acid sequence has the general formula FR1-CDR1-FR2-CDR2-FR3-CDR3-FR4, wherein FR1, FR2, FR3 and FR4 are framework regions and CDR1 is a sequence of amino acids with at least 90% sequence identity to the sequence of amino acids found at amino acid positions 31-37 of SEQ ID NO:2, CDR2 is a sequence of amino acids with at least 90% sequence identity to the sequence of amino acids found at amino acid positions 52-68 of SEQ ID NO:2 and CDR3 is a sequence of amino acids with at least 90% sequence identity to the sequence of amino acids found at amino acid positions 101-110 of SEQ ID NO:2; or CDR1 is a sequence of amino acids with at least 90% sequence identity to the sequence of amino acids found at amino acid positions 159-169 of SEQ ID NO:2, CDR2 is a sequence of amino acids with at least 90% sequence identity to the sequence of amino acids found at amino acid positions 185-191 of SEQ ID NO:2 and CDR3 is a sequence of amino acids with at least 90% sequence identity to the sequence of amino acids found at amino acid positions 224-233 of SEQ ID NO:2.

65. (New) The DNA molecule of claim 64, wherein CDR1 is the sequence of amino acids found at amino acid positions 31-37 of SEQ ID NO:2, CDR2 is the sequence of amino acids found at amino acid positions 52-68 of SEQ ID NO:2 and CDR3 is the sequence of amino acids found at amino acid positions 101-110 of SEQ ID NO:2; or CDR1 is the sequence of amino acids found at amino acid positions 159-169 of SEQ ID NO:2, CDR2 is the sequence of amino acids found at amino acid positions 185-191 of SEQ ID NO:2 and CDR3 is the sequence of amino acids found at amino acid positions 224-233 of SEQ ID NO:2,

and further wherein the polypeptide is capable of binding c-erbB-2.

66. (New) The DNA molecule of claim 42, wherein the coding sequence encodes a first polypeptide comprising a first amino acid sequence of the general formula FR1-CDR1-FR2-CDR2-FR3-CDR3-FR4 and a second polypeptide comprising a second amino acid sequence of the general formula FR1'-CDR1'-FR2'-CDR2'-FR3'-CDR3'-FR4', wherein FR1, FR2, FR3, FR4, FR1', FR2', FR3' and FR4' are framework regions and each of CDR1, CDR2, CDR3, CDR1',

CDR2' and CDR3' is a sequence of amino acids with at least 90% sequence identity to the sequence of amino acids found at amino acid positions 31-37 of SEQ ID NO:2, the sequence of amino acids found at amino acid positions 52-68 of SEQ ID NO:2, the sequence of amino acids found at amino acid positions 101-110 of SEQ ID NO:2, the sequence of amino acids found at amino acid positions 159-169 of SEQ ID NO:2, the sequence of amino acids found at amino acid positions 185-191 of SEQ ID NO:2 and the sequence of amino acids found at amino acid positions 224-233 of SEQ ID NO:2, respectively.

67. (New) The DNA molecule of claim 66, wherein said first and second polypeptides together are capable of binding c-erbB-2.

68. (New) The DNA molecule of claim 67, wherein each of CDR1, CDR2, CDR3, CDR1', CDR2' and CDR3' is the sequence of amino acids found at amino acid positions 31-37 of SEQ ID NO:2, the sequence of amino acids found at amino acid positions 52-68 of SEQ ID NO:2, the sequence of amino acids found at amino acid positions 101-110 of SEQ ID NO:2, the sequence of amino acids found at amino acid positions 159-169 of SEQ ID NO:2, the sequence of amino acids found at amino acid positions 185-191 of SEQ ID NO:2 and the sequence of amino acids found at amino acid positions 224-233 of SEQ ID NO:2, respectively,

and further wherein said first and second polypeptides together are capable of forming an antibody immunologically reactive with c-erbB-2.

69. (New) The DNA molecule of claim 68, wherein said first and second polypeptides together are capable of forming a humanized antibody.

70. (New) The DNA molecule of claim 69, wherein said FR sequences are human immunoglobulin framework region sequences of a human myeloma antibody.

71. (New) A recombinant vector comprising the DNA molecule of claim 59 operably linked to control elements, whereby the coding sequence encoding said polypeptide can be transcribed and translated in a host cell.

83. (New) A method of producing a recombinant polypeptide comprising:

(a) providing a population of host cells according to claim 77; and

(b) culturing said population of cells under conditions whereby the polypeptide encoded by the coding sequence present in said recombinant vector is expressed.

84. (New) A method of producing a recombinant polypeptide comprising:

(a) providing a population of host cells according to claim 78; and

(b) culturing said population of cells under conditions whereby the polypeptide encoded by the coding sequence present in said recombinant vector is expressed.

85. (New) A method of producing a recombinant polypeptide comprising:

(a) providing a population of host cells according to claim 79; and

(b) culturing said population of cells under conditions whereby the polypeptide encoded by the coding sequence present in said recombinant vector is expressed.

86. (New) A method of producing a recombinant polypeptide comprising:

(a) providing a population of host cells according to claim 80; and

(b) culturing said population of cells under conditions whereby the polypeptide encoded by the coding sequence present in said recombinant vector is expressed.

87. (New) A method of producing a recombinant polypeptide comprising:

(a) providing a population of host cells according to claim 81; and

(b) culturing said population of cells under conditions whereby the polypeptide encoded by the coding sequence present in said recombinant vector is expressed.

88. (New) A method of producing a recombinant polypeptide comprising:

(a) providing a population of host cells according to claim 82; and

(b) culturing said population of cells under conditions whereby the polypeptide encoded by the coding sequence present in said recombinant vector is expressed.

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